Developmental Mathematics II (TMTH 0373) Online

Credit: 3 semester credit hours (3 hours lecture)

Prerequisite: A score of 27-38 on the COMPASS or a grade of at least "C" in TMTH 0372. Also must complete the Online Orientation and answer yes to 7+ questions on the Online Learner Self-Assessment:
http://www.lit.edu/depts/DistanceEd/OnlineOrientation/OOStep2.aspx

Course Description

Topics in mathematics such as arithmetic operations, basic algebraic concepts and notation, geometry, and real and complex number systems. *This course is time-bound, structured and online. All tests must be proctored. See Proctoring Policy on page 3.*

Required Textbook and Materials

1. These two items are packaged together under ISBN-10 1256139807. Both are required.
    a. MyLabsPlus Standalone Access Code
        i. ISBN-10 is 1256159263
    b. <u>My Workbook</u> by Bittinger and Beecher, 8th Edition (Developmental Mathematics)
        i. ISBN-10 is 0321730909
2. Four function calculator $(+,-,\div,\times)$

Course Objectives

Upon completion of this course, the student will be able to:
1. Graph linear equations in two variables and understand the graphs of quadratic equations. (SCANS: C5, C6, C7, C18, C19, F1, F3, F5, F8, F9, F10, F11, F12)
2. Find the slope, y-intercept, equation of a line, and determine whether lines are parallel or perpendicular from their equations. (SCANS: C5, C6, C7, C18, C19, F1, F3, F5, F8, F9, F10, F11, F12)
3. Perform operations on polynomial expressions and radical expressions. (SCANS: C5, C6, C7, C18, C19, F1, F3, F5, F8, F9, F10, F11, F12)
4. Solve problems involving different types of equations and systems of linear equations. (SCANS: C5, C6, C7, C18, C19, F1, F3, F4, F5, F8, F9, F10, F11, F12)
5. Solve problems involving functions, scientific notation, and Pythagorean Theorem. (SCANS: C5, C6, C7, C18, C19, F1, F3, F5, F8, F9, F10, F11, F12)

SCANS Skills and Competencies

Beginning in the late 1980's, the U.S. Department of Labor **S**ecretary's **C**ommission on **A**chieving **N**ecessary **S**kills (SCANS) conducted extensive research and interviews with business owners, union leaders, supervisors, and laborers in a wide variety of work settings to determine what knowledge workers needed in order to perform well on a job. In 1991 the Commission announced its findings in *What Work Requires in Schools.* In its research, the Commission determined that "workplace know-how" consists of two elements: foundation skills and workplace competencies.

Approved: 11/12

Course Outline

A. Welcome to College:
   1. Study Skills for Mathematics
   2. Syllabus
B. Learning Lab
   1. Location and Hours
   2. Available Resources
C. Graphs of Linear Equations
   1. Graphs of Linear Equation
   2. Slope and Applications
   3. Equations of Lines
   4. Graphing Using the Slope and y-intercept
   5. Parallel and Perpendicular Lines
D. Polynomials: Operations
   1. Integers as Exponents
   2. Exponents and Scientific Notation
   3. Introduction to Polynomials
   4. Addition and Subtraction of Polynomials
   5. Multiplication of Polynomials
   6. Special Products
   7. Operations with Polynomials in Several Variables
   8. Division of Polynomials
E. Polynomials: Factoring
   1. Introduction to Factoring
   2. Factoring Trinomials of the Type $x^2 + bx + c$
   3. The ac-Method
   4. Factoring Trinomial Squares and Differences of Squares
   5. A General Strategy
   6. Solving Quadratic Equations by Factoring
   7. Applications of Quadratic Equations
G. Systems of Equations
   1. Introduction
   2. The Elimination Method
   3. Applications and Problem Solving
H. Radical Expressions and Equations
   1. Introduction to Radical Expressions
   2. Multiplying and Simplifying with Radical Expressions
   3. Quotients Involving Radical Expressions
   4. Addition, Subtraction, Multiplication
   5. Applications with Right Triangles
I. Quadratic Equations
   1. Quadratic Formula
   2. Functions

Grade Scale

90 – 100	A
80 – 89	B
70 – 79	C
0 – 69	F

Course Evaluation

Final grades will be calculated according to the following criteria:

1. Tests	60%
2. Comprehensive Final Exam	10%
3. Workbook	10%
4. Homework/Discussion	20%

All tests and the final exam must be proctored.

Approved: 11/12

The instructor will respond to e-mail and voice mail communication within 48 hours Monday through Friday.

Course Requirements

1. The student <u>must</u> attend an "on ground" orientation to Online Learning and the Technology tools utilized. NOTE: If the student lives more than 60 miles away, alternative arrangements may be made with the instructor.
2. The student will watch the lectures and take detailed notes in <u>My Workbook</u> by Bittinger and Beecher.
3. The student will complete assignments after watching the lecture using the information gained in the lectures.
4. The student will complete all chapter tests in the LIT *Learning Lab* (Building TC, 1st floor) or an alternative pre approved proctoring center by the established due date. Failure to do so will result in a zero for those tests.
5. The student will take the pre- and post-tests and the cumulative final exam in the LIT *Testing Center* (Building T1, room 106) or an alternative pre approved proctoring center. <u>My Workbook</u> will be turned into the proctor the day the student takes the final exam.
6. The student will participate in a <u>minimum</u> of two synchronous sessions during the semester.

Course Policies

1. Students, who do NOT attend the "on ground" orientation and/or did not make alternative arrangements, will be moved to an "on ground" section.
2. Students are NOT able to drop a developmental class if enrolled only in one developmental class. Students requiring developmental course work MUST take at least one developmental course each semester. Students who stop coming to class and fail to drop the course will earn an 'F' in the course.
3. You must log onto Blackboard and access the course a minimum of three times a week.
4. Student must participate in a minimum of two synchronous sessions during the semester.
5. Cheating of any kind will NOT be tolerated.
6. Internet Usage—Students are expected to use proper net etiquette while participation in course emails, assignment submissions, and online discussions.

Proctoring Policy

1. Who is a Proctor?

A proctor is an impartial monitor who administers a student's exam and ensures the security and integrity of the exam process. If proctoring is required, it is the student's responsibility to make the appropriate arrangements, notify the instructor of the arrangements, and pay any incurred fees.

2. Where may you have your test Proctored?

Students may choose to have the exam proctored on the LIT campus or another acceptable proctored environment. <u>LIT Proctoring services are *free* to LIT students.</u> Other Proctoring services may require a fee paid for by the student.

    a. Acceptable Proctors / Sites
- Lamar Institute of Technology Testing Center
- Testing Center which is a member of the National College Testing Association (NCTA). To locate a site: http://www.ncta-testing.org/cctc/
- Testing Center at an accredited college
- ProctorU: http://www.proctoru.com/forstudents.php (a webcam is required)
- Superior officer of the military

    b. Unacceptable Proctors / Sites
- Family members or relatives of the student
- Colleagues or co-workers
- Friends or peers or acquaintances
- Other students, whether from LIT or another campus

NOTE: The instructor reserves the right to deny any proctor, or to assign specific proctors as necessary.

3. What Are the Proctor's Responsibilities?

- Each proctor must keep the exam in a secure area until the student takes the exam.
- The proctor must ask the student for a photo ID if the proctor does not personally know the student.
- Talking to other students is <u>not</u> allowed during administration of the exam.
- Acceptable questions that may be asked by the student during the exam should be directed to the instructor. If the instructor cannot be contacted, the proctor should tell the student to (1) make a reasonable interpretation, (2) write this interpretation on the exam, and (3) continue working on the exam.
- Once the student is finished with the exam, the proctor must collect the exam and sign and date a proctor certification form. This form is only necessary if testing is not done at the LIT testing center. This form will be available within the LMS classroom portal. The proctor must then return **both the exam and certification form** to the instructor through a delivery method previously specified by the instructor.
- If the proctor is unable to administer the exam or cannot abide by the proctoring rules, the proctor must notify the instructor and the student.

4. How to Schedule and Take the Exam?

- Students should schedule their exam with the proctor no later than **one week** prior to the exam.
- Students must appear on time on the day and time scheduled for the exam.
- Students must provide a valid student ID or government issued ID.

- Students are responsible for providing all required supplies necessary for test taking as specified by the instructor.
- Students must follow all of the testing center's requirements.
- No cell phones, pagers, computers, PDAs, etc., are allowed in the testing area.
- No food or drinks are allowed in the testing area.
- No children may accompany students in the testing area.

Technical Requirements

The latest technical requirements, including hardware, compatible browsers, operation systems, software, Java, etc. can be found online at:
http://kb.blackboard.com/pages/viewpage.action?pageId=71860304
A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of the online technology and resources.

Disabilities Statement

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building.

Course Schedule (Subject to Change)

Week	Topic	References
1	Online Course Orientation Course introduction and policies	LIT "On Ground" orientation session Blackboard (Bb): Course Introduction
	Pre-Test	**LIT Testing Center or alternative proctoring center.**
	Review of Fractions, Signed Numbers, and Solving Equations	Blackboard (Bb): Video Lectures - Review MyMathLab (MML): Assignments 1, 2 & 3
2	Chapter 9: Graphs of Linear Equations • Section 1: Graphs and Application of Linear Equations. • Section 2: Slope and Applications • Section 4: Equations of Lines	Bb: Chapter 9 Videos: Sections: 1, 3 & 4 MML: • Worksheets for Classroom or Lab Practice: Sections 9.1, 9.3, and 9.4 • Assignments 9.1, 9.3 and 9.4

3	Chapter 9: Graphs of Linear Equations • Section 5: Graphing Using the Slope and y-intercept • Section 6: Parallel and Perpendicular Lines	Bb: Chapter 9 Videos: Sections: 5 & 6 MML: • Worksheets: 9.5 and 9.6 • Assignments 9.5 and 9.6
	Live Review **Chapter 9 Test** **Chapter 9 Worksheets Due**	**Internet** **LIT Learning Lab or alternative proctoring center.**
4	Chapter 10: Polynomials: Operations • Section 1: Integers as Exponents • Section 2: Exponents and Scientific Notation • Section 3: Introduction to Polynomials	Bb: Chapter 10 Videos: Sections: 1, 2 & 3 MML: • Worksheets: 10.1, 10.2 and 10.3 • Assignments 10.1, 10.2 and 10.3
5	Chapter 10: Polynomials: Operations • Section 4: Addition and Subtraction of Polynomials • Section 5: Multiplication of Polynomials • Section 6: Special Products	Bb: Chapter 10 Videos: Sections: 4, 5 & 6 MML: • Worksheets: 10.4, 10.5 and 10.6 • Assignments 10.4, 10.5 and 10.6
6	Chapter 10: Polynomials: Operations • Section 7: Operations with Polynomials in Several Variables • Section 8: Division of Polynomials	Bb: Chapter 10 Videos: Sections: 7 & 8 MML: • Worksheets: 10.7 and 10.8 • Assignments 10.7 and 10.8
	Live Review **Chapter 10 Test** **Chapter 10 Worksheets Due**	**Internet** **LIT Learning Lab or alternative proctoring center.**
7	Chapter 11: Polynomials: Factoring • Section 1: Introduction to Factoring • Section 2: Factoring Trinomials of the Type $x^2 + bx + c$ • Section 4: The ac-Method	Bb: Chapter 11 Videos: Sections: 1,2 & 4 MML: • Worksheets: 11.1, 11.2 and 11.4 • Assignments: 11.1, 11.2 and 11.4
8	Chapter 11: Polynomials: Factoring • Section 5: Factoring Trinomial Squares and Differences of Squares • Section 6: A General Strategy • Section 7: Solving Quadratic	Bb: Chapter 11 Videos: Sections: 5, 6, 7 & 8 MML: • Worksheets: 11.5, 11.6, 11.7 and 11.8

	Equations by Factoring • Section 8: Applications of Quadratic Equations	• Assignments: 11.5, 11.6, 11.7 and 11.8
	Live Review **Chapter 11 Test** **Chapter 11 Worksheets Due**	**Internet** **LIT Learning Lab or alternative proctoring center.**
9	Chapter 13: Systems of Equations • Section 1: Systems of Equations in Two Variables • Section 3: The Elimination Method	Bb: Chapter 13 Videos: Sections: 1 & 3 MML: • Worksheets: 13.1 and 13.3 • Assignments: 13.1 and 13.3
10	Chapter 13, Section 4: Systems of Equations – Applications and Problem Solving	Bb: Chapter 13 Videos: Section: 4 MML: • Worksheets: 13.4 • Assignments: 13.4
	Live Review **Chapter 13 Test** **Chapter 13 Worksheets Due**	**Internet** **LIT Learning Lab or alternative proctoring center.**
11	Chapter 14: Radical Expressions and Equations • Section 1: Introduction to Radical Expressions • Section 2: Multiplying and Simplifying with Radical Expressions • Section 3: Quotients Involving Radical Expressions	Bb: Chapter 14 Videos: Section: 1, 2 & 3 MML: • Worksheets: 14.1, 14.2 and 14.3 • Assignments: 14.1, 14.2 and 14.3
12	Chapter 14: Radical Expressions and Equations • Section 4: Addition, Subtraction, and more Multiplication • Section 6: Applications with Right Triangles	Bb: Chapter 14 Videos: Sections: 4 and 6 MML: • Worksheets: 14.4 and 14.6 • Assignments: 14.4 and 14.6
	Live Review **Chapter 14 Test** **Chapter 14 Worksheets Due**	**Internet** **LIT Learning Lab or alternative proctoring center.**

13	Chapter 15: Quadratic Equations - Quadratic Formula - Functions	Bb: Chapter 15 Videos: Sections: 4 and 6 MML: - Worksheets: 14.4 and 14.6 - Assignments: 14.4 and 14.6
14	**Live Review** **Chapter 15 Test** **Chapter 15 Worksheets Due**	**Internet** **LIT Learning Lab or alternative proctoring center.**
15	Final Exam Review	Bb: Final Exam Review Materials MML: Assignments & Worksheets
16	**Live Review** **Proctored Final Exam**	**Internet** **LIT Testing Center or alternative proctoring center.**

Contact information varies by instructor.